Space Weather Forecast

Issued on Tuesday, 24 May 2022 at 13:30 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of moderate solar activity and R1-R2 radio blackouts throughout the forecast period. Minor geomagnetic storms possible on 26th or 27th.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Low, with only Common-class flares emanating from the most southern of two large regions in the northwest quadrant. The more northern region is larger and more complex, but has been relatively inactive. Seven remaining regions are considered small and benign. No Earth-directed CMEs (coronal mass ejections) have been observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar wind has declined from elevated to close to background levels through the last 24 hours due to the easing of a fast solar wind. Total magnetic field strength has been weak, with the north-south component also varying weakly. Geomagnetic activity has been Quiet.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is expected to be mainly Low, but with a chance of Moderate activity and a very slight chance of High activity. This is due to two large, complex regions in the western hemisphere and the potential for new complex regions to rotate across from the east.

Solar Wind / Geomagnetic Activity: No CMEs are currently expected with a CME from an eruption on 23rd May considered to not be Earth-directed. Solar winds are expected to be close to or at ambient levels through 24th and 25th May. Two fast solar wind developments on 26th and perhaps early on 27th May could elevate winds to between 500-550km/s. Geomagnetic activity is forecast to be mainly Quiet for 24th and 25th May. Active intervals are then possible during 26th May, with a risk of G1/Minor Storms later on 26th and perhaps early on 27th May.

Energetic Particles / Solar Radiation: No solar radiation storms are expected, but with a daily slight chance of flux reaching S1, should any notable flares occur.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	10	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	40	40	40	40
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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